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THE USE OF PREENLISTMENT VARIABLES TO
PREDICT THE ATTRITION OF NAVY FEMALE ENLISTEES

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THE USE OF PREENLISTMENT VARIABLES TO PREDICT THE ATTRITION OF NAVY FEMALE ENLISTEES

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Although the attrition rate for first-term enlisted women has been decreasing, it is still unacceptable to the Navy. The purpose of the present study was to conduct the exploratory research necessary to develop a questionnaire for screening female applicants. Attrition factors were identified from interviews and from research on turnover, mental health, sex roles, and vocational choice. These factors were used to construct two experimental questionnaires (QUEST 1 and QUEST 2). One or the other

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of the questionnaires was administered to each of 997 female recruits. Empirical keying was employed to create "response-option" scales to predict attrition, which were then validated.

Thirty-eight items were found to be significantly related to attrition, and an estimated cross-validation R of .30 was obtained in a multiple-regression analysis. A response-option scale constructed from the unique QUEST 1 items yielded the highest validation correlation—.25.

The 38 items should be evaluated further, and psychometrically and legally inappropriate items should be dropped. An attempt should then be made to determine if remaining items improve prediction over and above the Armed Services Vocational Aptitude Battery, and a similar determination should be made for a "second generation" response-option scale.

FOREWORD

Work was performed for the Chief of Naval Operations (OP-01) under Work Unit 55.521.021.03.03, Personnel Assimilation and Supervision. This report is the second in a series of studies examining attrition among first-term female enlistees. The first report was TR 77-20: <u>Why Women Enlist: The Navy as an Occupational Choice</u>. Future reports using a longitudinal design will address institutional factors causing premature discharges from the Navy and the psychological variables that predict effective performance.

The Navy Recruiting Command is the primary consumer of the report.

An earlier version of this report was presented in November 1978 at the 20th Annual Conference of the Military Testing Association in Oklahoma City.

The help of the Recruit Training Command, Orlando, in administering the questionnaires is gratefully acknowledged, as is the statistical expertise of Dr. William J. Moonan of this Center.

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Commanding Officer

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Problem

Although the attrition rate for first-term enlisted women has decreased so that it now equals that of men, it is still considered unacceptable to the Navy, especially since women are currently required to meet higher entrance requirements than men. Should the courts or operational requirements dictate that a single selection standard be established for both sexes, the attrition rate of women might increase. With greater numbers of women being enlisted into the Navy, a higher attrition rate, should it develop, would have negative consequences for the Navy's defense mission.

Purpose

The purpose of this study was to conduct the exploratory research necessary to develop a questionnaire to screen female applicants for enlisted service. As a basis for this questionnaire, the study attempted to identify preenlistment variables that predict attrition among female first-term enlistees.

Approach

Previous studies were reviewed on turnover, mental health, sex roles, and vocational choice, and Navy personnel were interviewed to identify variables that might cause female attrition. Eight categories of variables were defined, and hypotheses were advanced relating them to attrition. Questionnaire items were written to represent each of the eight areas and to form the basis for two experimental questionnaires. One or the other of these questionnaires was administered to each of 997 incoming female recruits. Approximately 18 months later, women who had left the Navy were classified as attritees. The questionnaire data were analyzed to determine which items, and combination of items, best predicted attrition. In addition, half of the women were used to identify the "key" response options of items (i.e., those selected by at least 10 percent more of the attritees than survivors, or vice-versa). The remaining half of the women received an overall score on these key responses, and the scores were used to predict attrition.

Results

1. The analyses showed that 38 items were statistically related to attrition beyond that expected by chance; the practical relationships between these items and attrition, however, were only weak to moderate. Most of these items dealt with the applicant's mental health and occupational needs, although others described her motivations for enlisting and her personal history. Combining 18 of these items in an exploratory analysis produced a composite that proved to be a fairly strong and stable predictor of attrition.

2. Scores on the key responses of items predicted attrition fairly successfully for the specific sample under consideration.

3. Twenty-three items were identified which should yield the most predictive key responses for all female applicants (i.e., for the overall population).

Recommendations

Results suggest that items and response options can be combined fairly successfully to predict attrition among women. Additional work must be done, however, to produce an operational questionnaire:

1.   Determine whether the 38 items that were significantly related to attrition are acceptable to the Navy and satisfy legal requirements on privacy. Delete those that do not.

2.   Determine whether applicants falsify their responses to the mental health items when informed, as the Privacy Act requires, that these items are being used to screen them.

3.   Administer the remaining items to female applicants at Armed Forces Examining and Entrance Stations.   Determine by regression analysis whether these items can effectively supplement the Armed Services Vocational Aptitude Battery (ASVAB) to predict attrition.

4.   Test and evaluate the 23 items found to contain key responses. Determine if a useful composite can be constructed from them to supplement the ASVAB in selecting female applicants.

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INTRODUCTION

Background

Many of the laws and regulations curtailing military opportunities for women have been voided, and the number of women in each service branch has increased significantly. At the end of 1978, there were approximately 120,000 women in uniform, compared to 36,000 in 1967.

In the Navy, women are filling positions formerly closed to them. They serve as mechanics, electricians, boatswain's mates, and, in some cases, hull technicians; others are in command positions at recruiting commands and Armed Forces Examining and Entrance Stations. A woman was promoted to Rear Admiral in 1976 for the first time outside the Navy Nurse Corps.

In short, it can be safely stated that women are becoming an integral part of the Navy and are shouldering a progressively greater share of the defense burden. There is reason to believe that this trend will continue.

Problem

The attrition of women enlistees in the early 1970's was a serious problem: Approximately 39 percent of the enlisted women entering the Navy in 1971 attrited within 23 months, while the comparable figure for men was 28 percent (OASD, 1977). Since 1973, however, policy changes regarding pregnancy have resulted in similar attrition rates for both sexes (OASD, 1977). Thus, it would seem that the original problem has been overcome by circumstances, but since the attrition rate of women is still too high (28% in the first 2 years for a 1975 cohort group studied by Olson and Stumph, 1978), more effective screening of applicants is still needed.

There is also the distinct possibility that the female attrition rate will increase in the future if the requirement for a high school diploma is removed. It has been shown, at least for men, that the most valid predictor of premature attrition is educational level (Lockman & Gordon, 1977; Plag & Goffman, 1966; Sands, 1977). Any increase in the attrition rate of women could pose a serious problem for the Navy's defense mission, especially if the percentage of women doubles by 1983 as recommended by the former Chief of Naval Personnel (Watkins, 1978).

Purpose

The purpose of this study was to conduct the exploratory research necessary to develop a questionnaire to screen female applicants for enlisted service. As a basis for this questionnaire, the study attempted to identify preenlistment variables that predict attrition among female first-term enlistees.

METHOD

Questionnaires

Mental level, educational level, and number of primary dependents are three variables currently used to screen men for enlisted service (Lockman & Gordon, 1977). Women, however, differ much less than men on these variables. Statistically, therefore, the potential value of these variables for predicting female attrition is reduced appreciably.[1]

Variables thought to affect female attrition were identified by interviewing Navy personnel and by reviewing the research literature on turnover, mental health, sex roles, and vocational choice. Eight categories of variables were defined, hypotheses relating them to attrition were advanced where possible, and the eight categories were used to construct two experimental questionnaires--QUEST 1 and QUEST 2 (see Appendix A and B).

The following eight categories served as a basis for questionnaire items:

1. **Personal history.** Personal history items were included because biographical factors influence the development of an individual's values and ways of coping. A few items were taken from the Navy Opinion Inventory (BUPERS Report Symbol 5314-53), but most were constructed specifically for this study. Typical items asked the applicant to describe the size of her hometown, the level of happiness in her home, the number of males in the household, the degree of discipline she had experienced during her adolescence, any violations of law, and her previous reactions to being away from home.

2. **Female role ideology.** Female role ideologies ranging from traditional to contemporary were defined by Lipman-Blumen (1972). Traditional ideology views women as homemakers and men as financial providers, while contemporary ideology favors a sharing of responsibilities. Beyond these general definitions, women with a contemporary ideology (a) aspire to graduate school, (b) have experienced chronic loneliness as adolescents, (c) perceive their mothers as dissatisfied with homemaking, and (d) view both parents as unsuccessful in life. Women with traditional ideologies hold opposite views and aspirations. Since 80 percent of the Navy's female recruits are assigned to jobs requiring traditional roles, it was hypothesized that an individual with a traditional ideology would attrite less often than one with a contemporary ideology.

3. **Mental health.** A study by Craighill (1947), although 32 years old, seems consistent with conventional wisdom about today's Navy woman. This study indicated that a woman entering military service faces more adjustment obstacles than men. For example, the more limited range of jobs open to women may produce dissatisfaction, pregnancy may produce job complications, women value individuality over the military's more common group activity, and women desire privacy not usually available in the military. Schuckit and Gunderson (1972) found that Navy enlisted women were hospitalized four times as often as enlisted men, although Lyon (1964) suggested that this

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[1]If, in the future, women applicants no longer are required to have high school diplomas, education and mental level may become useful predictors for women also. Nevertheless, additional variables appropriate to women (such as those examined in the present study) still will be needed to predict attrition.

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difference was inflated by the Navy's tendency to hospitalize women for administrative reasons (e.g., because of the lack of women's brigs). Given the demands placed on a woman who is trying to adjust to a system geared to men, emotional stability was viewed in the current study as a key variable in attrition. All items were taken from Friedman (1956), who used questionnaire responses to differentiate between female recruits who became psychiatric "casualties" and those who adjusted successfully. Typical items were "I often get down in the dumps," "I have trouble making friends," "I often have trouble getting to sleep," and "It seems to me that men get a better deal in life."

4. Fear of success or motivation to fail. Horner (1969) developed these concepts to explain why women do not fully use their capabilities when competing with men. For the present study, a story was created in which a woman is selected as Recruit Chief Petty Officer (RCPO) during the first week of training. The respondent was asked to speculate on whether the woman's selection was based on merit and whether she would succeed in her career. Since no information about the woman was provided in the story, the respondent's answers were expected to reflect her self-concept and her will to succeed or fail. Thus, the story was used as a projective mechanism, although it was recognized that other mechanisms might be operating.

5. Realistic expectations about the Navy. Porter and Steers (1973) concluded from the work of Weitz (1956), Youngberg (1963), and Macedonia (1969) that unrealistic expectations are an important cause of attrition. Hunter and Million (1977) argued that women applying for military service are at a disadvantage because they lack knowledge of military life and recruiters cannot give them the information they need. Questionnaire items were written to determine whether an applicant's friends or relatives had been in the service and had described their experiences to her.

6. Enlistment motivation. It was thought that attritees and survivors might have different reasons for enlisting. Fifty enlisted women who had recently been assigned to their first duty stations were asked to list the five most significant factors leading to their enlistment, and these reasons were used to construct questionnaire items.

7. Similarity to previous successful recruits. Six attributes of successful recruits were identified in an interview with a former recruit company commander (Thomas, 1974). These attributes were (a) a commitment to the Navy as a career, (b) a favorable attitude toward wearing the Navy uniform, (c) some history of shared sleeping quarters, (d) a tendency toward conformity rather than individuality, (e) the predisposition toward deliberative rather than impulsive decision making, and (f) a basically unquestioning acceptance of orders from superiors. Women who had characteristics typical of successful recruits were expected to adjust more readily to Navy life and therefore be less likely to attrite during their first enlistment.

8. Occupational needs. Hall (1971) developed an inventory to identify the needs of individuals selecting a vocation. He grouped these needs into 17 areas such as information/knowledge, creativity/independence, risk, and belongingness. It was thought that there might be a set of occupational needs for women that would be compatible with Navy service. Women possessing these needs would find them fulfilled in the Navy and thus find satisfaction, while those with incompatible needs would be dissatisfied and attrite. Items relevant to Navy life were drawn from most of Hall's areas.

Two QUEST forms were created because of the large number of mental health and occupational need items. To include all these items on one questionnaire would have unduly increased administration time.

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QUEST 1 and 2 had the same number of items allotted to each content area. Some of the items were common to both questionnaires and some were unique. Table 1 shows the makeup of these instruments.

Table 1

QUEST 1 and QUEST 2: Content Areas and Number
of Common and Unique Items

Content Area	Number of Items		
	Common	Unique	Total
Personal History	26	0	26
Female-role Ideology	1	5	6
Mental Health	0	24	24
Motivation to Fail	6	0	6
Realistic Expectations	3	1	4
Enlistment Motivation	21	0	21
Similarity to Successful Recruits	0	6	6
Occupational Needs	0	27	27
Total	57	63	120

Data Collection

One or the other of the two questionnaires was administered to each female recruit after she had been assigned to her company, but before she had actually begun training. Participants were requested to record their names and social security numbers because the study was part of a longitudinal effort. Individuals were assured, however, that the results would be reported only through group statistics.

Sample

Newly formed companies of women recruits at the Recruit Training Command in Orlando, FL, participated in the study over a 2-month period; in all, 20 companies comprising 997 women participated. Women still in the Navy 18 months after the formation of the first company were classified as survivors, and women leaving before this date were classified as attritees.[2] In addition to rejecting applicants likely to

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[2]Since the study was exploratory, this cutoff was used for all individuals instead of establishing a separate cutoff for each person.

attrite, the Navy would also prefer to reject those likely to become unsatisfactory performers. Unsatisfactory performers were defined in the present study as women with an average rating of 2.7 or below on their most recent Report of Enlisted Performance Evaluation, i.e., as women who were likely candidates for a dishonorable discharge. Nine unsatisfactory performers were identified. In this report, the term "attritee" includes unsatisfactory performers.

Nine women who left the Navy after completing their enlistments in the Naval Reserve were dropped from the study because they could not legitimately be classified as premature attritees;[3] and 11 women were eliminated because they had recorded inaccurate social security numbers, making it impossible to trace them. Since a selection decision is made for every applicant, all Regular Navy women leaving the Navy before the 18-month cutoff were considered attritees, including those discharged for homosexuality, Navy-incurred medical disabilities, and undue financial hardship, all of which are basically unpredictable.

All of the women included in the study were high school graduates, as required by Navy regulations; approximately 7 percent were married and 93 percent were single. Approximately 90 percent of the women were Caucasian; 9 percent, Black; and the rest, Indian, Malayan, and Mongolian. In general, the women came from medium and small cities and towns. (See Thomas, 1977, for more details on their backgrounds.)

Seven samples were created (N = 977). Half of the attritees completing QUEST 1, and half of the survivors, were randomly assigned to Sample 1; and the remaining QUEST 1 individuals, to Sample 2. Samples 3 and 4 were constructed in the same manner from QUEST 2 respondents. These four samples were combined in various ways to yield Samples 5, 6, and 7. The following numbers of attritees and survivors were assigned to the seven samples:

Sample 1 (QUEST 1)--52 attritees and 190 survivors.
Sample 2 (QUEST 1)--53 attritees and 190 survivors.
Sample 3 (QUEST 2)--49 attritees and 197 survivors.
Sample 4 (QUEST 2)--50 attritees and 196 survivors.
Sample 5--a combination of Samples 1 and 2: 105 attritees and 380 survivors.
Sample 6--a combination of Samples 3 and 4: 99 attritees and 393 survivors.
Sample 7--the total sample: 204 attritees and 773 survivors.

Data Analysis

Item Statistics

Chi-square statistics were computed to determine the statistical significance of the relationship between each item and attrition. Sample 5 responses were used to examine the unique QUEST 1 items; those from Sample 6, to examine the unique QUEST 2 items; and those from Sample 7, to examine the common items. Since the study was exploratory, a cutoff of $p < .10$ was used.

Since chi-square statistics are dependent on the size of the sample N, analyses were also conducted to determine strength of association. For ordinally scaled items (i.e., those with logically ordered responses), a Kendall tau b was computed when the degrees of

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[3]These individuals could have been classified as survivors. With an N of over 700 survivors, however, the addition of nine more individuals would be statistically inconsequential.

freedom (df) equaled 1, and a tau c was computed in all other situations. Kendall statistics range from +1 to -1, the sign depending on the direction of the relationship between the variables. For nominally scaled items (i.e., those in which response options are not on a continuum), a Cramer V was computed to determine strength of association. The SPSS CROSSTABS computer program was used for the analyses. (See Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975, for a further discussion of the statistics.)

Univariate item analyses were followed by an exploratory multivariate analysis. Ordinally scaled items in QUEST 1 whose tau statistics were greater than or equal to .10 were identified on the basis of Sample 1 responses and used in a stepwise linear multiple regression analysis to predict attrition in Sample 2. The criterion was each woman's status as a survivor or an attritee. A shrinkage formula (Guilford & Fruchter, 1978, p. 377) was used to estimate the cross-validation R.[4]

Scale Statistics

Certain terms should be introduced before discussing the scale statistics. "Key" item responses are those selected by at least 10 percent more attritees than survivors, or vice versa. The complete set of key responses for a designated block of items (such as the unique QUEST 1 items) is a "scale." Samples 1, 3, and 5 represent "developmental" samples in the present study; and Samples 2, 4, and 6, "test" samples.

Empirical keying was used to create predictor scales.[5] In particular, a separate set of key responses was identified for unique QUEST 1 items (Sample 1), unique QUEST 2 items (Sample 3), and common items (Sample 5). The resulting "unique QUEST 1" scale was validated using Sample 2; the "unique QUEST 2" scale, using Sample 4; and the "common" scale, using Sample 6. Validation consisted of the following: Each developmental scale was scored in the test sample by assigning a particular weight (e.g., a unit weight) to key responses and a zero to all others. A point-biserial correlation was computed between scale scores and attrition. A Tilton "percentage overlap" statistic was also computed, described as ". . . the percentage of scores made by one group [i.e., attritees] that could be matched with scores in the other group [i.e., survivors] " (Tilton, 1937, p. 657). The key construction (KEYCON) computer program (NPRDC, 1977) was used to identify the key responses, score the scales, and provide point-biserial and Tilton statistics.

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[4]Factor analysis was not used in the study because factorially pure scales, while appropriate for a theoretical study, might contain items with essentially no relationship to attrition. The regression analysis, in contrast, used predictors that had taus equal to or greater than .10 in the weighting sample.

[5]Campbell (1971) used empirical keying to construct scales for the Strong Vocational Interest Blank, although he used an 18-percent criterion to identify key responses. For the present study, preliminary analysis showed that a 10-percent difference would be statistically significant and would yield scales that could be administered in a reasonable period of time.

Four types of weights were used in the test sample to score the scale: (1) unit weights, (2) multiple weights, (3) actual percentage differences between attritees and survivors, and (4) endorsement ratio. With unit weighting, a key response was scored as a +1 or a -1, depending upon whether more survivors or attritees had selected it in the developmental sample. All other responses were scored as zero. Women in the test sample received one of these scores (+1, -1, or 0) for each of their responses, and the weights they received across items were summed to yield a total scale score. The 10-percent criterion for identifying key responses was also used for the other weighting strategies; only the weight assigned to the key response varied. (Appendix C describes the four weighting strategies in detail.)

Validation of the key response scales represented a test of empirical keying and of the specific items used in the study. Once this test was passed, the developmental and test samples were combined, and key responses were identified once again. These "combined sample" responses should be the most stable in the population.

A final comment is in order on the data analyses. As implied previously, mental level was thought to have less potential for predicting female attrition than the variables examined in the current study. Nevertheless, it seems likely to the authors that the Navy will continue to use aptitude scores as its primary selection tool for the foreseeable future. The most desirable approach, therefore, would have been to determine if study variables (e.g., the key response scales) improve prediction above and beyond the Armed Services Vocational Aptitude Battery. This attempt, however, could not be made because the Basic Test Battery was in use when the data were collected.

8

Relationship Between Items and Attrition

Of the 57 items that were unique to QUEST 1, 21 demonstrated a statistically significant relationship with attrition in the chi-square analysis (p < .10).[6] Nineteen of the 21 items were ordinally scaled and 2 were nominally scaled. Table 2 presents the results for the ordinally scaled items and specifies the nature of their relationship with attrition; for example, a woman is more likely to attrite if she values individuality as opposed to conformity (item 41). While the 19 items were statistically significant, the absolute strength of their relationships with attrition was only weak to moderate, obtained statistics varying from .008 (item 92, tau c) to .215 (item 52, tau b).

The two nominally scaled items that demonstrated statistically significant relationships with attrition were items 34 and 35. Item 34, group activities with males, represented the category, realistic expectations about the Navy. This item was significant at the .001 level (χ^2 = 19.630, df = 4), although its strength of association with attrition was only moderate (Cramer V = .202). Item 35, family religion, reflected the content area, female role ideology. This item was significant at the .033 level (χ^2 = 10.492, df = 4), but its strength of association was weak (Cramer V = .150).

Of the eight content areas identified earlier, only two—mental health and occupational needs—produced a sizable number of significant items in the chi-square analysis. The nature of the relationship between the mental health items and attrition was as hypothesized: The more negative a woman's self-perceptions (e.g., nervous, headache-prone, depressed), the more likely she was to attrite. Although no hypotheses were advanced for the occupational need items, a discernible need profile emerged for the attritee.

Of the 57 items unique to QUEST 2, 8 (all ordinally scaled) were significantly related to attrition (see Table 3). Strength of association values ranged from .002 (item 93, tau c) to .123 (item 66, tau b). Mental health items emerged from the chi-square analysis once again, and their relationship with attrition was as expected.

Of the 63 items common to QUEST 1 and QUEST 2, 9 achieved statistical significance. Table 4 presents the results for 6 ordinally scaled items and specifies the nature of their relationship with attrition. Strength of association values for these items varied from .028 (item 113, tau c) to .110 (item 117, tau c). Three nominally scaled items that demonstrated statistically significant relationships with attrition were 14, 17, and 20, all of which represented the personal history content area. Item 14 on childhood clubs was significant at the .016 level (χ^2 = 12.240, df = 4), and had a Cramer V of .124. Item 17 on types of male friendships was significant at the .005 level (χ^2 = 15.038, df = 4), and had a Cramer V of .124. Item 20 concerned marital history, was significant at the .002 level (χ^2 = 16.727, df = 4), and had a Cramer V of .131.

Of the nine significant common items, five represented the personal history category; and four, the enlistment motivation category. Although no hypotheses were formulated for the enlistment motivation items, the relationship between the personal history item on dating (item 19) was as expected: Women dating infrequently were more likely to attrite than were those dating frequently. No hypothesis had been advanced for the other ordinally scaled personal history item on marriage (item 21).

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[6]If the 57 items were administered to numerous samples of female recruits, an average of 6 significant relationships would be found by chance (57 x .10 = 5.7).

Few significant items emerged in the chi-square analyses in four content areas: (1) female-role ideology, (2) motivation to fail, (3) realistic expectations about the Navy, and (4) similarity to successful recruits.

Table 2

Unique, Ordinally Scaled QUEST 1 Items Significantly
Related to Attrition

Item Number	Category[a]	χ^2 (df)	p	Strength of Association[b]	Nature of Relationship: Woman More Likely to Attrite if She
41	SR	11.109(3)	.011	-.067	Values individuality.
46	MH	13.903(1)	.001	.174	Reacts poorly to pressure.
47	MH	5.261(1)	.022	.109	Is nervous person.
52	MH	21.087(1)	.001	.215	Experiences many headaches.
56	MH	3.637(1)	.057	.097	Had bossy teachers.
60	MH	5.140(1)	.023	.109	Is subject to depression.
62	MH	19.687(1)	.001	.208	Trembles with anxiety.
63	MH	5.366(1)	.021	-.114	Had poor childhood health.
64	MH	7.579(1)	.006	.131	Has difficulty sleeping.
66	MH	12.809(1)	.001	.168	Worries a lot.
71	ON	12.908(4)	.012	-.105	Desires autonomy.
73	ON	8.981(4)	.062	.109	Doesn't value novelty.
76	ON	16.488(4)	.002	.106	Doesn't value work teams.
77	ON	9.185(4)	.057	.064	Doesn't value caring supervisor.
78	ON	8.698(4)	.069	.083	Doesn't need job respect.
79	ON	14.376(4)	.006	.083	Doesn't value orderly procedures.
89	ON	8.355(4)	.079	.031	Doesn't value set plans.
92	ON	8.083(4)	.089	.008	Doesn't value interpersonally oriented jobs.
94	ON	13.060(4)	.011	-.089	Enjoys working outdoors.

Note. Results are based on responses of Sample 5. N = 485.

[a]Category abbreviations: SR = similarity to previous successful recruits, MH = mental health, ON = occupational need.

[b]Tau b was computed for one degree of freedom, and tau c was computed for all other situations.

Table 3

Unique, Ordinally Scaled QUEST 2 Items Significantly Related to Attrition

Item Number	Category[a]	χ^2 (df)	p	Strength of Association[b]	Nature of Relationship: Woman More Likely to Attrite if She
34	MH	10.694(4)	.030	−.054	Had a neglectful mother.
47	MH	5.619(1)	.018	.112	Is nervous.
49	MH	6.445(1)	.011	.121	Had severe childhood punishment.
52	MH	5.252(1)	.022	.110	Faints a lot.
54	MH	6.574(1)	.010	.122	Believes she has bad luck.
60	MH	9.112(2)	.011	.099	Is chronically tired.
66	MH	6.753(1)	.009	.123	Becomes upset when yelled at.
93	ON	10.558(4)	.032	−.002	Wants to travel.

Note. Results are based on responses of Sample 6. N = 492.

[a]Category abbreviations: MH = mental health, ON = occupational need.

[b]Tau b was computed for one degree of freedom, and tau c was computed for all other situations.

Table 4

Common, Ordinally Scaled Items Significantly
Related to Attrition

Item Number[a]	Category[b]	χ^2 (df)	p	Strength of Association[c]	Nature of Relationship: Woman More Likely to Attrite if She
19	PH	9.688(4)	.046	.092	Dates infrequently.
21	PH	15.578(4)	.004	.088	Plans to marry or remarry.
111	EM	9.759(4)	.048	-.055	Doesn't want to travel and meet people.[d]
113	EM	8.003(4)	.092	-.028	Doesn't want further education.
115	EM	14.238(4)	.007	.096	Has relatives or friends in service.
117	EM	18.138(4)	.001	.110	Wants to help family financially.

Note. Results are based on responses of Sample 7. $\underline{N}$ = 977.

[a]Item numbers were the same for both questionnaires.

[b]Category abbreviations: PH = personal history, EM = enlistment motivation.

[c]All values are tau $\underline{c}$ statistics.

[d]This item varied somewhat in content from item 93 in Table 3, perhaps accounting for the different results.

Percentage response distributions for all those items with significant chi-square values are presented in Appendix D.

In summary, 38 items were found to be significantly related to attrition in the chi-square analyses. In most cases, however, the strength of these relationships was weak to moderate as indicated in the tau and Cramer V analyses.

A multiple regression analysis was conducted next. Only those unique QUEST 1 items whose tau statistics were greater than or equal to .10 were identified from Sample 1 to serve as predictors. These items included three personal history items (29, 46, 47), one "realistic expectation" item (60), seven mental health items (73, 74, 79, 87, 89, 91, 93), and seven occupational need items (100, 103, 106, 108, 110, 121, 141). Using these predictors with Sample 2 produced a multiple R of .388 with attrition; it was estimated (Guilford & Fruchter, 1978) that an R of .295 would be obtained if regression weights were applied to a new sample. (Since a restricted sample was used, this correlation should be a conservative estimate.)

Relationship Between Scales and Attrition

Table 5 presents empirical keying results for the test sample, with results broken down by scoring system. The strongest validation coefficients with attrition were found for the response option scales formed from the common and unique QUEST 1 items, with most of the correlations significant at the .01 level. The scale formed from unique QUEST 2 response options was not significantly correlated with attrition, regardless of the scoring system involved. Overall, for any given scale, the different scoring systems produced minimal differences among the validation coefficients.

After combining the developmental and test samples, 19 unique QUEST 1 items (N = 485) and four common items (N = 977) were identified that contained at least one key response.[7] These items represented the following content areas: two from personal history, one from realistic expectations about the Navy, one from female role ideology, one from similarity to previous successful recruits, two from enlistment motivation, seven from mental health, and nine from occupational needs. Appendix E identifies these items, the key responses, and the actual percentage difference between attritees and survivors.

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[7] Because of the low validation coefficients obtained for the QUEST 2 response option scale, QUEST 2 items were deleted from this analysis.

13

Table 5

Relationship in the Test Sample Between Attrition and Three Response-Option Scales

Scoring System	Tilton Percentage Overlap	Validation Coefficient[a]
Unique QUEST 1 Scale (N = 243)		
Unit Weighting	75.32	.247*
Multiple Weighting	76.13	.242*
Difference Weighting	76.05	.242*
Endorsement Weighting	84.83	.172*
Unique QUEST 2 Scale (N = 246)		
Unit Weighting	92.69	.069
Multiple Weighting	93.25	.063
Difference Weighting	93.41	.062
Endorsement Weighting	93.58	.065
Common Scale (N = 492)		
Unit Weighting	85.03	.149*
Multiple Weighting	85.70	.141*
Difference Weighting	85.14	.147*
Endorsement Weighting	93.79	.065

[a] Correlations are point-biserials evaluated on the basis of a one-tailed test.

*$p < .01$.

RECOMMENDATIONS

Results suggest that items and response options can be combined fairly successfully to predict attrition among women. Additional work must be done, however, to produce an operational questionnaire:

1.   Determine whether the 38 items that were significantly related to attrition are acceptable to the Navy and satisfy legal requirements on privacy. Delete those that do not.

2.   Determine whether applicants falsify their responses to the mental health items when informed, as the Privacy Act requires, that these items are being used to screen them. Delete items that can be faked.

3.   Administer the remaining items to female applicants at Armed Forces Examining and Entrance Stations to determine by regression analysis whether these items can effectively supplement the Armed Services Vocational Aptitude Battery (ASVAB) to predict attrition.

4.   Test and evaluate the 23 items found to contain key responses. Determine if a useful composite of them can be constructed to supplement the ASVAB in the selection of female applicants.

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APPENDIX A

QUEST 1

QUEST 1

Table A-1

Breakdown of QUEST 1 by Content Area
and Item Number

Content Area	Item Numbers
Personal History/Demographic Variables	1-22, 27-30
Realistic Expectations about Navy	23, 32-34
Similarity to Previous Successful Recruits	38-43
Female Role Ideology	31, 35-37, 45, 49
Enlistment Motivation	24-26, 103-120
Mental Health	44, 46-48, 50-69
Occupational Needs	70-96
Motive to Fail	97-102

OUEST 1
+

You are being asked to participate in a study involving Navy women.
The questions in this booklet concern your background, feelings and work
values. Your answers will be treated confidentially by the research
personnel conducting the study and will not become a part of your Navy
record. In the report which is prepared upon the completion of the study,
only percentages or other group statistics will be indicated. Your co-
operation is greatly appreciated and should benefit young women enlisting
in the Navy in the future.

Please remove your General Purpose OMR Answer Sheet from the
booklet. On Side A, print your name and today's date. Next, read the
directions for marking answers. Turn the answer sheet over and print
your social security number and as many of the letters of your last name
as there are boxes provided on the left side of the sheet. Code your
name and social security number in the circles below the boxes. Do the
same for Company Number (CO. NO.), birthdate and highest grade passed.

Now turn the answer sheet over to Side A again. Do not begin reading
the questions in the booklet until told to do so. Please do not write
in the booklet; instead, mark your responses on the answer sheet. If you
have any questions, please raise your hand now.

This section is about you and your family during your childhood and teen years. For each question choose the best answer from those given and blacken the circle for that letter on the answer sheet.

1. What was the size of your home town or the place you lived in longest? (Give your best estimate)

   A. I lived in the country or in a town of less than 5,000 people
   B. 5,000 to 20,000 people
   C. 20,000 to 100,000 people
   D. More than 100,000 people
   E. I lived in a suburb of a metropolitan area

2. Would you want to live there again?

   A. Yes
   B. Maybe
   C. No

3. Where did you live for the longest time prior to joining the Navy?

   A. In my own family home
   B. In the home of a friend or guardian or in a foster home
   C. In an institution or boarding school
   D. First in my family home but later somewhere else
   E. During my early years not in my family home and later with my family

4. How would you rate the happiness level of your home life?

   A. Happy, most of the time
   B. About evenly happy and unhappy
   C. Neither happy nor unhappy
   D. Unhappy most of the time

5. How would you rate your own happiness level as you were growing up?

   A. Happy most of the time
   B. About 50-50 happy, unhappy
   C. Neither happy nor unhappy
   D. Unhappy most of the time

6. How many children were there in the home you grew up in? (Include yourself)

   A. One
   B. Two
   C. Three
   D. Four
   E. Five or more

7. What were the sexes of the children in your family?

   A. I was the only child
   B. There were girls only
   C. There were boys only (except for me)
   D. There were both boys and girls

8. What is your birth position in your family?

   A. Only
   B. Oldest
   C. In the middle
   D. Youngest

9. Which of your brothers or sisters do you feel closest to? (If you are an only child, leave blank)

   A. There were only two of us and we were close
   B. I was closest to one of my sisters or only sister
   C. I was closest to one of my brothers or only brother
   D. I was equally close to all of them
   E. I was not close to any of them

10. How many people lived in your home? (Including you)

    A. 1 to 3
    B. 4 to 6
    C. 7 to 9
    D. 10 to 12
    E. 13 or more

11. How many bedrooms were in the home you lived in for the longest time?

A. None
B. 1 bedroom
C. 2 bedrooms
D. 3 bedrooms
E. 4 or more bedrooms

12. When you were growing up were there any males living in the household?

A. Yes, my father
B. Yes, my brother(s)
C. Yes, a father and a brother(s)
D. Yes, other males, but a father or brother did not live there
E. No males lived in the household

13. In which of these activities did you participate in high school? (Leave blank if none are true)

A. Student government
B. Band, orchestra, glee club, drama, debate or school newspaper
C. Cheerleader, drill team or sport team involving after school competition
D. Special interest school sponsored club
E. Several of the above

14. In which of these activities did you participate for at least a year? (Leave blank if none)

A. Girl Scouts, Camp Fire Girls, Jobs Daughters, Girl's Club or other service club
B. Bobby Sox League, swimming team, tennis club, horseback riding club or other team sports club
C. Church youth group
D. 4-H Club or Future Farmers of America
E. Several of the above

15. Where did your money come from when you were of high school age?

A. Regular allowance from family
B. From my parents or guardians as I needed it
C. Earned money at odd jobs
D. Earned money at a regular job
E. Both from my parents or guardians and my job

16. What type of friendships do you usually tend to form with girls? (Mark the choice that is most typical of you even though more than one choice may be correct)

A. A close friendship with one best friend
B. A few close friends and several casual friendships
C. Many casual friendships
D. 1 or 2 casual friendships, just acquaintances
E. I don't have any girl friends

17. What kind of friendships do you tend to form with boys? (Mark the choice that is most typical of you even though more than one choice may be correct)

A. One close exclusive friendship (steady) and several casual friends
B. Several close friendships (several boy friends)
C. Many casual friends who happen to be boys
D. A few casual friendships
E. None of the boys are really my friends

18. What kind of discipline did you receive during your teen years?

A. There were many rules and restrictions and everything I did was watched and directed by my parents or guardian
B. There were a number of rules and restrictions but I was allowed some leeway in how to follow them
C. The rules and restrictions were few but my activities were watched carefully
D. The rules and restrictions were few and it was up to me to do what I felt was right
E. There were rules, but no one paid much attention to what I was doing

19. On the average, how often did you date during the past year? (leave blank if you were married)

A. Four or more times a week
B. Usually, every weekend
C. Once or twice a week; not necessarily on the weekend
D. Didn't date much
E. I didn't date at all

20. Have you ever come close to getting married?

A. No, never
B. Yes, once
C. Yes, more than once
D. I am married
E. I was married

21. Do you want to be married or married again? (leave blank if you are already married)

A. Yes, hopefully within the next two years
B. Yes, within the next four years
C. Yes, sometime
D. Perhaps sometime
E. No, I don't want to get married

22. How many children will you probably have during your lifetime?

A. None, I don't want any
B. 1 or 2
C. 3 or 4
D. 5 or more
E. I am not able to have children, but may adopt one or more

23. Was your father ever in the service?

A. No, never
B. He was in the Navy when I enlisted
C. He was in the Army, Air Force, Marines or Coast Guard when I enlisted
D. He had been in the Army, Navy, Air Force, Marines or Coast Guard
E. He was in more than one service or I had a father and step-father who were in different services

24. Who encouraged you most in deciding to join the Navy?

A. My father or mother
B. My brother(s) and/or sister(s)
C. My friends
D. Recruiter
E. No one encouraged me, I made the decision entirely on my own

25. How long did your decision to enlist in the Navy take? Consider the starting point to be the time when you first gave serious consideration to joining the service and the conclusion to be when you signed up with the recruiter.

A. Less than one week
B. Less than one month
C. Less than six months
D. More than six months

26. Did you inquire about or consider the other military services?

    A. No
    B. I thought about the other services but decided to join the Navy
    C. I inquired into the programs of other services and chose the Navy

27. Before you joined the Navy had you ever moved away from home on your own initiative for any reason other than attending school in another city or getting married?

    A. Yes, I didn't get along with my parents or guardians
    B. Yes, I didn't get along with my brother, sister or some other person in the home
    C. Yes, I felt ready to be out on my own
    D. Yes, I felt I should leave to ease my family's financial difficulties
    E. No, I have never moved away from home

28. Before you joined the Navy what were your feelings when you had been away from home for at least a week?

    A. Prior to my enlistment I had never been away from home for a week
    B. I missed my family and/or friends so much that I didn't have much fun
    C. I enjoyed myself but was glad to get back
    D. I was usually having such a good time I didn't even think about home
    E. I hated to go back at all

29. How old are you?

    A. 18 or younger
    B. 19
    C. 20
    D. 21 to 25
    E. 26 or older

30. Have you ever been detained by a law enforcement officer for other than a traffic violation?

    A. Yes
    B. No

31. During most of my childhood, my mother was: (leave blank if your mother did not live with you)

    A. not employed outside the home and seemed happy in her role as homemaker.
    B. a homemaker but wished she could have had a career.
    C. employed outside the home but would have preferred to stay home.
    D. employed outside the home and didn't enjoy being a homemaker.
    E. employed outside the home and enjoyed both her career and her family responsibilities.

32. Do you have a female friend or relative who has been in any military service?

    A. Yes, a mother, grandmother and/or sister
    B. Yes, a good friend
    C. Yes, a good friend and a relative
    D. No, but I think I know quite a bit about what it's like for a woman
    E. No, and I don't know too much about it

33. If you had a female friend or relative who had been in any military service did you discuss her experiences in the military with her? (leave blank if you did not have such a friend or relative.)

    A. Yes, frequently
    B. Yes, some
    C. No, not at all

34. Which of these activities did you <u>most frequently</u> participate in with your father, brother or other males in your home? (<u>Choose only one</u>)

   A. Team or individual sports, as a participant
   B. Watching sporting events
   C. Automotive or home repairs
   D. Several of the above with about equal frequency
   E. None of the above or no males lived in my home

35. As a child my family's religion was:

   A. Protestant
   B. Catholic
   C. Jewish
   D. An Eastern Religion such as Buddism or Hinduism
   E. We had no formal religion

36. Since my childhood I have:

   A. not changed from my family's religion.
   B. converted from my childhood religion to Protestantism or Catholicism.
   C. converted from my childhood religion to Judaism.
   D. converted from my childhood religion to an Eastern religion, atheism or no formal religion.

37. I think education beyond high school is:

   A. important.
   B. neither important or un-important.
   C. not important.

38. My primary goal in joining the Navy was to: (<u>Choose only one</u>)

   A. travel and see new things.
   B. learn a job or skill so I can earn a living.
   C. make a career in the Navy.
   D. mark time until I find the man I want to marry or until I develop my life goals.
   E. other.

39. My feelings about wearing a uniform are <u>best</u> expressed by the following statement: (<u>Choose only one</u>)

   A. It makes me look sharp and neat
   B. I accept it because it is part of being in the Navy
   C. I don't like it because we all look alike
   D. I don't like it because it is unattractive

40. Have you ever lived in a dorm or shared your sleeping quarters with at least one other person?

   A. No, never
   B. Yes, but only for short periods, such as at summer camp
   C. Yes, I roomed with someone else for several months
   D. Yes, I roomed with someone else several years
   E. Yes, for most of my life I have shared a room

41. In the Navy it is important to:

   A. conform to the group wishes for the good of all.
   B. only conform to the group wishes when I have to.
   C. maintain my individuality.

42. Even if I didn't understand the reason for an order I would follow it.

   A. True
   B. False

43. How do you usually make decisions?

   A. I go by my first impulse; it's usually right
   B. I look at both sides of the question and make up my mind quickly
   C. I ask around and get all the facts then think them through before I decide
   D. I get the facts, think a while, talk it over with friends, think some more, then make a cautious decision
   E. I have a hard time making up my mind and even when I do I feel I may be making the wrong decision

Answer the following statements by blackening the "A" response for "true" and the "B" response for "false" on your answer sheet. It may be difficult to decide whether the statement is true or false for you. If the statement is more true than false, blacken the "true (A)" response. If the statement is more false than true, blacken the "false (B)" response.

44. As a child I feel I was often punished unfairly.

45. Both my parents encouraged me to get as much education as I could.

46. Rushing and being under pressure upsets me.

47. I consider myself a nervous person.

48. From time to time I have pains in my heart or chest.

49. I usually was not frustrated by the demands of my parents.

50. One of my parents was often mean or unkind to me.

51. Usually I prefer to be alone rather than with other people.

52. Sometimes I am troubled by sick headaches.

53. People seem to purposely annoy me or pick on me.

54. I often feel that most of my troubles are not my fault.

55. Most of life seems dull to me.

56. The worst thing about school was the bossy attitude of the teachers.

57. I am often ill at ease around my friends.

58. It seems to me that men get a better "deal" in life.

59. I have trouble making friends.

60. I often get down in the dumps.

61. I have tried to avoid being noticed in a group so people won't be able to criticize me.

62. Sometimes my hands tremble enough to bother me.

63. Insofar as I know, I was considered a very healthy child.

64. I often have trouble in getting to sleep.

65. I have never been fired or asked to resign from a job.

66. I am often worried or upset.

67. I consider my friends to be my equal.

68. Boys and men seem too fresh to me.

69. I feel lost when I have to make important decisions about my life all by myself.

In taking a job, people usually consider several factors in addition to the type of work they will be asked to do. For example, almost everyone is interested in good working conditions, salary and hours. But people differ on whether they want to work with others or alone, whether they prefer indoors or outdoor work, and whether they like doing a single task or want a lot of variety.

Listed below are a number of things you might think about in choosing a job. Some are very important to you and some you don't really care about. Please consider each one carefully. Then blacken the circle on your answer sheet that best reflects your feeling on that item. Assume that many different jobs are open to you and it is really your choice. Use the code below:

    A - I do not want a job that includes this

    B - It doesn't matter to me whether it is part of the job or not

    C - I would like this to be part of the job

    D - Having this is very important to me

    E - I would not take a job if this wasn't part of it

70. Involves little close supervision.

71. Lets me be self-directed and not do everything by the book.

72. Requires that I be organized and efficient.

73. Involves excitement, competition and new situations.

74. Requires meeting deadlines.

75. Requires that I keep learning new things.

76. Allows me to feel I am a member of a team group.

77. Includes a supervisor who cares about the worker's problems.

78. Makes other people respect me for what I'm doing.

79. Has established orderly procedures for getting the work done.

80. Leaves me free from emotional stress and worry.

81. Gives me a chance to take on more and more responsibility.

82. Provides the opportunity to advance to a supervisory position.

83. Helps others or in some way makes the world a little better place.

A - I do not want a job that includes this

B - It doesn't matter to me whether it is part of the job or not

C - I would like this to be part of the job

D - Having this is very important to me

E - I would not take a job if this wasn't part of it

84. Gains me admiration and publicity for what I do.

85. Lets me express my own personality and talents.

86. Gives me the opportunity to do the things I do best.

87. Gives me more personal than financial rewards.

88. Insures that I am able to get assistance on difficult work assignments or when a problem occurs from my supervisor.

89. Follows a set plan or routine with few changes.

90. Requires contact with a lot of people during the day.

91. Involves working mostly with my hands and having the results seen by others.

92. Involves getting to know people very well, as in nursing or personnel work.

93. Has convenient travel to and from work.

94. Includes working outdoors, at least part of the time.

95. Sometimes involves strange irregular hours.

96. Involves physical risk.

A short story is printed below. Try to imagine how you would feel
if you were a member of the company described. Read the story and then
rate your feelings about the statements that follow according to the
scale below.

A - Strongly disagree
B - Disagree
C - Neither agree nor disagree
D - Agree
E - Strongly agree

Blacken the circle on your answer sheet that corresponds to the letter
of your choice on the rating scale.

You are assigned to recruit training at Orlando, Florida. The
companies are 25% female and 75% male. During the first week
of training a girl named Debby is chosen Recruit Chief Petty
Officer of your company. The other nine companies in the training
group have male RCPOs. Your company is awarded the Brigade Flag
at graduation for having the best academic and military record
in the training group. At a party after graduation, the guys
start talking about Debby. They decide:

97. She had really good leadership qualities. She will probably advance
quickly and eventually make a career of the Navy.

98. She was shown favoritism or had connections. In the next three years
she will probably get out of the Navy.

99. She was very much military material and in the next three years she
will probably get into an officer's program.

100. She was really just lucky to get a good company.

101. She was fair and understanding in carrying out her duties. She will
probably reach her intended goals in life.

102. She thought she was really great but soon she will be put in her
"place." She probably will not complete her first enlistment.

How did your family and friends feel about your joining the Navy?
For each of the next four questions, blacken the "A" circle if the person(s)
Approved or the "D" circle if they Disapproved. Choose the response that
represents the majority view if the item refers to more than one person.

103. Father

104. Mother

105. Brother(s) and/or sister(s)

106. Peers and friends

Listed below are factors that may or may not have led to your enlistment in the Navy. Read the item and then decide whether the factors were important in your decision to join the Navy. Mark your answers on the answer sheet according to this scale.

A - Very important

B - Important

C - Neither Important or unimportant

D - Not very important

E - Unimportant or doesn't apply to me

107. I wanted the security I felt I could find in the Navy.

108. I have a basic respect for the military.

109. I wanted to be on my own and be financially independent.

110. I needed the money and benefits you get in the Navy.

111. I wanted to travel and meet new people.

112. I was not ready to continue school or college and I didn't necessarily want to get married.

113. I wanted to further my education, learn a new skill or get quick school/training.

114. I needed a job or a better job and there were few job opportunities where I lived.

115. I have a husband, relative(s) or male friends in the service.

116. I wanted to get away from my family and home town.

117. I wanted to help my family financially.

118. I needed to know my own capacities and resources better.

119. I wanted to better my life or make something out of my life.

120. I wanted to go to college but didn't have the money.

APPENDIX B

QUEST 2

QUEST 2

Table B-1

Breakdown of QUEST 2 by Content Area
and Item Number

Content Area	Item Numbers
Personal History/Demographic Variables	1-22, 27-30
Realistic Expectations about Navy	23, 32-33, 35
Similarity to Previous Successful Recruits	38-43
Female Role Ideology	31, 34, 36-37, 44-45
Enlistment Motivation	24-26, 103-120
Mental Health	46-69
Occupational Needs	70-96
Motive to Fail	97-102

QUEST 2
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You are being asked to participate in a study involving Navy women. The questions in this booklet concern your background, feelings and work values. Your answers will be treated confidentially by the research personnel conducting the study and will not become a part of your Navy record. In the report which is prepared upon the completion of the study, only percentages or other group statistics will be indicated. Your co-operation is greatly appreciated and should benefit young women enlisting in the Navy in the future.

Please remove your General Purpose OMR Answer Sheet from the booklet. On Side A, print your name and today's date. Next, read the directions for marking answers. Turn the answer sheet over and print your social security number and as many of the letters of your last name as there are boxes provided on the left side of the sheet. Code your name and social security number in the circles below the boxes. Do the same for Company Number (CO. NO.), birthdate and highest grade passed.

Now turn the answer sheet over to Side A again. Do not begin reading the questions in the booklet until told to do so. Please do not write in the booklet; instead, mark your responses on the answer sheet. If you have any questions, please raise your hand now.

This section is about you and your family during your childhood and teen years. For each question choose the best answer from those given and blacken the circle for that letter on the answer sheet.

1. What was the size of your home town or the place you lived in longest? (Give your best estimate)

   A. I lived in the country or in a town of less than 5,000 people
   B. 5,000 to 20,000 people
   C. 20,000 to 100,000 people
   D. More than 100,000 people
   E. I lived in a suburb of a metropolitan area

2. Would you want to live there again?

   A. Yes
   B. Maybe
   C. No

3. Where did you live for the longest time prior to joining the Navy?

   A. In my own family home
   B. In the home of a friend or guardian or in a foster home
   C. In an institution or boarding school
   D. First in my family home but later somewhere else
   E. During my early years not in my family home and later with my family

4. How would you rate the happiness level of your home life?

   A. Happy, most of the time
   B. About evenly happy and unhappy
   C. Neither happy nor unhappy
   D. Unhappy most of the time

5. How would you rate your own happiness level as you were growing up?

   A. Happy most of the time
   B. About 50-50 happy, unhappy
   C. Neither happy nor unhappy
   D. Unhappy most of the time

6. How many children were there in the home you grew up in? (Include yourself)

   A. One
   B. Two
   C. Three
   D. Four
   E. Five or more

7. What were the sexes of the children in your family?

   A. I was the only child
   B. There were girls only
   C. There were boys only (except for me)
   D. There were both boys and girls

8. What is your birth position in your family?

   A. Only
   B. Oldest
   C. In the middle
   D. Youngest

9. Which of your brothers or sisters do you feel closest to? (If you are an only child, leave blank)

   A. There were only two of us and we were close
   B. I was closest to one of my sisters or only sister
   C. I was closest to one of my brothers or only brother
   D. I was equally close to all of them
   E. I was not close to any of them

10. How many people lived in your home? (Including you)

   A. 1 to 3
   B. 4 to 6
   C. 7 to 9
   D. 10 to 12
   E. 13 or more

11. How many bedrooms were in the home you lived in for the longest time?

A. None
B. 1 bedroom
C. 2 bedrooms
D. 3 bedrooms
E. 4 or more bedrooms

12. When you were growing up were there any males living in the household?

A. Yes, my father
B. Yes, my brother(s)
C. Yes, a father and a brother(s)
D. Yes, other males, but a father or brother did not live there
E. No males lived in the household

13. In which of these activities did you participate in high school? (Leave blank if none are true)

A. Student government
B. Band, orchestra, glee club, drama, debate or school newspaper
C. Cheerleader, drill team or sport team involving after school competition
D. Special interest school sponsored club
E. Several of the above

14. In which of these activities did you participate for at least a year? (Leave blank if none)

A. Girl Scouts, Camp Fire Girls, Jobs Daughters, Girl's Club or other service club
B. Bobby Sox League, swimming team, tennis club, horseback riding club or other team sports club
C. Church youth group
D. 4-H Club or Future Farmers of America
E. Several of the above

15. Where did your money come from when you were of high school age?

A. Regular allowance from family
B. From my parents or guardians as I needed it
C. Earned money at odd jobs
D. Earned money at a regular job
E. Both from my parents or guardians and my job

16. What type of friendships do you usually tend to form with girls? (Mark the choice that is most typical of you even though more than one choice may be correct)

A. A close friendship with one best friend
B. A few close friends and several casual friendships
C. Many casual friendships
D. 1 or 2 casual friendships, just acquaintances
E. I don't have any girl friends

17. What kind of friendships do you tend to form with boys? (Mark the choice that is most typical of you even though more than one choice may be correct)

A. One close exclusive friendship (steady) and several casual friends
B. Several close friendships (several boy friends)
C. Many casual friends who happen to be boys
D. A few casual friendships
E. None of the boys are really my friends

18. What kind of discipline did you receive during your teen years?

    A. There were many rules and restrictions and everything I did was watched and directed by my parents or guardian
    B. There were a number of rules and restrictions but I was allowed some leeway in how to follow them
    C. The rules and restrictions were few but my activities were watched carefully
    D. The rules and restrictions were few and it was up to me to do what I felt was right
    E. There were rules, but no one paid much attention to what I was doing

19. On the average, how often did you date during the past year? (leave blank if you were married)

    A. Four or more times a week
    B. Usually, every weekend
    C. Once or twice a week; not necessarily on the weekend
    D. Didn't date much
    E. I didn't date at all

20. Have you ever come close to getting married?

    A. No, never
    B. Yes, once
    C. Yes, more than once
    D. I am married
    E. I was married

21. Do you want to be married or married again? (leave blank if you are already married)

    A. Yes, hopefully within the next two years
    B. Yes, within the next four years
    C. Yes, sometime
    D. Perhaps sometime
    E. No, I don't want to get married

22. How many children will you probably have during your lifetime?

    A. None, I don't want any
    B. 1 or 2
    C. 3 or 4
    D. 5 or more
    E. I am not able to have children, but may adopt one or more

23. Was your father ever in the service?

    A. No, never
    B. He was in the Navy when I enlisted
    C. He was in the Army, Air Force, Marines or Coast Guard when I enlisted
    D. He had been in the Army, Navy, Air Force, Marines or Coast Guard
    E. He was in more than one service or I had a father and step-father who were in different services

24. Who encouraged you most in deciding to join the Navy?

    A. My father or mother
    B. My brother(s) and/or sister(s)
    C. My friends
    D. Recruiter
    E. No one encouraged me, I made the decision entirely on my own

25. How long did your decision to enlist in the Navy take? Consider the starting point to be the time when you first gave serious consideration to joining the service and the conclusion to be when you signed up with the recruiter.

    A. Less than one week
    B. Less than one month
    C. Less than six months
    D. More than six months

26. Did you inquire about or consider the other military services?

    A. No
    B. I thought about the other services but decided to join the Navy
    C. I inquired into the programs of other services and chose the Navy

27. Before you joined the Navy had you ever moved away from home on your own initiative for any reason other than attending school in another city or getting married?

    A. Yes, I didn't get along with my parents or guardians
    B. Yes, I didn't get along with my brother, sister or some other person in the home
    C. Yes, I felt ready to be out on my own
    D. Yes, I felt I should leave to ease my family's financial difficulties
    E. No, I have never moved away from home

28. Before you joined the Navy what were your feelings when you had been away from home for at least a week?

    A. Prior to my enlistment I had never been away from home for a week
    B. I missed my family and/or friends so much that I didn't have much fun
    C. I enjoyed myself but was glad to get back
    D. I was usually having such a good time I didn't even think about home
    E. I hated to go back at all

29. How old are you?

    A. 18 or younger
    B. 19
    C. 20
    D. 21 to 25
    E. 26 or older

30. Have you ever been detained by a law enforcement officer for other than a traffic violation?

    A. Yes
    B. No

31. During most of my childhood, my mother was: (leave blank if your mother did not live with you)

    A. not employed outside the home and seemed happy in her role as homemaker.
    B. a homemaker but wished she could have had a career.
    C. employed outside the home but would have preferred to stay home.
    D. employed outside the home and didn't enjoy being a homemaker.
    E. employed outside the home and enjoyed both her career and her family responsibilities.

32. Do you have a female friend or relative who has been in any military service?

    A. Yes, a mother, grandmother and/or sister
    B. Yes, a good friend
    C. Yes, a good friend and a relative
    D. No, but I think I know quite a bit about what it's like for a woman
    E. No, and I don't know too much about it

33. If you had a female friend or relative who had been in any military service did you discuss her experiences in the military with her? (leave blank if you did not have such a friend or relative.)

    A. Yes, frequently
    B. Yes, some
    C. No, not at all

34. I feel that my mother's attitude toward me was: (If you had no mother leave blank)

A. Warm and accepting
B. Critical and loving - she expected a great deal of me
C. Critical; it was difficult to please her
D. Uninterested; she didn't care much about my friends or activities as long as I behaved
E. Neglectful, she paid no attention to anything I did

35. I used to participate with the males in my household in watching sporting events, playing at some sport, or making automotive or household repairs.

A. Often
B. Occasionally
C. We did things together, but not those things
D. I never did things with the males in my household
E. There were no males in my household

36. I feel my parents have been:

A. successful, and I would like to pattern my life after theirs.
B. successful, but I would like to live differently.
C. not successful in the usual sense but I like their way of life.
D. not successful and I don't want to live that way.
E. I never knew my parents.

37. My parents thought education beyond high school was:

A. important.
B. useful, if you need it to meet your goals.
C. unnecessary.
D. a waste of money.

38. Which of the following is closest to your life goals?

A. Work until I meet the right man, then stay home and raise a family
B. Work til I meet the right man, stay home and raise a family, then go back to work when they are old enough
C. Combine a career and a marriage, but not have children
D. Combine career, marriage and motherhood
E. Have a career and never marry

39. My feelings about wearing a Navy uniform are best expressed by the following statement:

A. I will wear it with pride, even when it is not required.
B. I will wear it when appropriate but really prefer civilian clothes.
C. I think it is unattractive and cannot understand why women in the Navy have not pressured for something more stylish.

40. When it comes to living with other people:

A. Privacy is important to me
B. I don't mind sharing my living space with others
C. I prefer to have roommates and people around me most of the time

41. The way I usually handle new situations is:

A. to change and be the way the situation I'm in requires me to be.
B. to figure out the best way of doing things for me and stick to it.
C. Sort of feel my way through and hope everything turns out all right.

42. How do you behave when someone in authority tells you to do something and you have no idea why it should be done?

   A. I always do it, no questions asked
   B. If there appears to be no reason for doing it, I'll probably ask questions
   C. Since I can do a better job when I understand the purpose, I'll ask questions
   D. It's unreasonable for the military to expect blind obedience of its personnel. If there is a good reason, I'll do it. If not, I won't

43. Which of the following is your usual way of making decisions?

   A. I have found that my first impulse is usually best. Therefore, I decide quickly
   B. It takes me a short time to make up my mind. I consider the pros and cons and then decide
   C. I usually make some inquiries to try to determine the facts first and then decide
   D. I think about it a while, discuss it with others, think some more and then decide
   E. I have a hard time making decisions and wonder afterwards whether I made the right one

Answer the following statements by blackening the "A" response for "true" and the "B" response for "false" on your answer sheet. It may be difficult to decide whether the statement is true or false for you. If the statement is more true than false, blacken the "true (A)" response. If the statement is more false than true blacken the "false (B)" response.

44. I feel that both my parents have led successful lives.

45. During adolescence, I think I felt lonelier than other girls.

46. I have difficulty learning under stress.

47. Sometimes I am bothered by nervousness.

48. I am f----· ·· bothered by back pains.

49. When   punished, it was usually more severe than other kids got.

50. I think I was loved more by one of my parents than the other.

51. I have dates less often than most girls my own age.

52. I have had dizzy spells or fainting spells.

53. I really like to fight.

54. I feel that I have more than my share of bad luck.

55. I feel my life has been unsuccessful up to now.

56. I resent others trying to advise me.

57. I feel comfortable around new people.

58. I have sometimes wished I had been born a boy.

59. My family moved around enough to handicap me in making good friends.

60. I often feel tired, run down, and gloomy.

61. I have held myself back in a group to avoid being noticed.

62. I often bit my fingernails as a kid.

63. I feel I have some particular physical or health problem.

64. I disliked going to school as a kid.

65. People usually misunderstand me.

66. Being hollered at makes me really upset.

67. Life is best when we are children.

68. It makes me uncomfortable when I haven't privacy in which to bathe and dress.

69. I really like having people help me or tell me what to do.

   In taking a job, people usually consider several factors in addition to the type of work they will be asked to do. For example, almost everyone is interested in good working conditions, salary and hours. But, people differ on whether they want to work with others or alone, whether they prefer indoor or outdoor work, and whether they like doing a single task or want a lot of variety.

   Listed below are a number of things you might think about in choosing a job. Some are very important to you and some you don't really care about. Please consider each one carefully. Then blacken the circle on your answer sheet that reflects your feeling on that item. Assume that many different jobs are open to you and it is really your choice. Use the code below:

   A - I do not want a job that includes this

   B - It doesn't matter to me whether it is part of the job or not

   C - I would like this to be part of the job

   D - Having this is very important to me

   E - I would not take a job if this wasn't part of it

70. Permits me to work alone without a lot of interruptions.

71. Lets me decide what needs to be done and how to do it.

72. Requires that I do a lot of planning.

73. Requires me to meet and resolve frequent emergencies.

74. Involves pressure to produce.

75. Teaches a new skill or further develops one I already have.

A - I do not want a job that includes this

B - It doesn't matter to me whether it is part of the job or not

C - I would like this to be part of the job

D - Having this is very important to me

E - I would not take a job if this wasn't part of it

76. Allows me to work with friendly people of both sexes.

77. Encourages open communication between supervisor and worker.

78. Treats people with respect.

79. Requires doing one job well, rather than different things at different times.

80. Guarantees periodic raises, paid vacations and sick leave.

81. Provides an opportunity for growth and advancement.

82. Rewards those who work harder than others.

83. Influences the lives of others.

84. Allows others to recognize the value of my work.

85. Allows me to use my imagination, creativity and own ideas.

86. Makes use of my special talents or skills.

87. Gives me a feeling of really doing something important.

88. Has someone checking my work so that the final responsibility is not mine.

89. Defines my job responsibilities clearly.

90. Deals with printed materials and data rather than with people.

91. Involves working mostly with things, such as machines.

92. Influences the way people think as in teaching, selling, persuading or negotiating.

93. Requires travel to another state or country at least once a year.

94. Provides a cheerful, clean working environment.

95. Has good working hours.

96. Involves some physical exercise.

A short story is printed below. Try to imagine how you would feel if you were a member of the company described. Read the story and then rate your feelings about the statements that follow according to the scale below.

> A - Strongly disagree
> B - Disagree
> C - Neither agree nor disagree
> D - Agree
> E - Strongly agree

Blacken the circle on your answer sheet that corresponds to the letter of your choice on the rating scale.

> You are assigned to recruit training at Orlando, Florida. The companies are 25% female and 75% male. During the first week of training a girl named Debby is chosen Recruit Chief Petty Officer of your company. The other nine companies in the training group have male RCPOs. Your company is awarded the Brigade Flag at graduation for having the best academic and military record in the training group. At a party after graduation, the guys start talking about Debby. They decide:

97. She had really good leadership qualities. She will probably advance quickly and eventually make a career of the Navy.

98. She was shown favoritism or had connections. In the next three years she will probably get out of the Navy.

99. She was very much military material and in the next three years she will probably get into an officer's program.

100. She was really just lucky to get a good company.

101. She was fair and understanding in carrying out her duties. She will probably reach her intended goals in life.

102. She thought she was really great but soon she will be put in her "place." She probably will not complete her first enlistment.

How did your family and friends feel about your joining the Navy? For each of the next four questions, blacken the "A" circle if the person(s) Approved or the "D" circle if they Disapproved. Choose the response that represents the majority view if the item refers to more than one person.

103. Father

104. Mother

105. Brother(s) and/or sister(s)

106. Peers and friends

Listed below are factors that may or may not have led to your enlistment in the Navy. Read the item and then decide whether the factors were important in your decision to join the Navy. Mark your answers on the answer sheet according to this scale.

A - Very important

B - Important

C - Neither important or unimportant

D - Not very important

E - Unimportant or doesn't apply to me

107. I wanted the security I felt I could find in the Navy.

108. I have a basic respect for the military.

109. I wanted to be on my own and be financially independent.

110. I needed the money and benefits you get in the Navy.

111. I wanted to travel and meet new people.

112. I was not ready to continue school or college and I didn't necessarily want to get married.

113. I wanted to further my education, learn a new skill or get quick school/training.

114. I needed a job or a better job and there were few job opportunities where I lived.

115. I have a husband, relative(s) or male friends in the service.

116. I wanted to get away from my family and home town.

117. I wanted to help my family financially.

118. I needed to know my own capacities and resources better.

119. I wanted to better my life or make something out of my life.

120. I wanted to go to college but didn't have the money.

APPENDIX C

WEIGHTING STRATEGIES USED IN SCALE ANALYSIS

WEIGHTING STRATEGIES USED IN SCALE SCORING

The strategies used to generate scale scores were based on: (1) unit weighting, (2) multiple weighting, (3) percentage difference weighting, and (4) endorsement weighting. Refer to Table C-1 in conjunction with the following explanation of these strategies.

Table C-1

Hypothetical Response Data for the Purpose of Illustrating Weighting Strategies

	Percentage of Respondents	
Item	Survivors	Attritees
My parents thought education beyond high school was:		
A. Important.	28	38
B. Useful, if you need it to meet your goals.	39	17
C. Unnecessary.	16	22
D. A waste of money.	17	23
Total	100	100

In <u>unit weighting</u>, key responses were identified in the developmental sample that had been selected by 10 percent more survivors than attritees, or vice versa. When a woman in the test sample selected one of these responses, she was assigned a +1 or a -1 depending on whether more survivors or attritees had selected it in the developmental sample. If she did not select a key response she was given a zero. Referring to Table C-1, she would receive a -1 if she answered A, a +1 for a B answer, and a zero for a C or D answer. The weights she received <u>across</u> items would then be summed to yield a total scale score.

The 10-percent criterion for identifying key responses for unit weighting was also used for the other weighting strategies; only the weight assigned to the key response varied. In <u>multiple weighting</u>, a woman in the test sample was assigned a ±1, ±2, ±3, or ±4 weight for the selection of a key response. Whether she received a plus or a minus weight depended on whether survivors had selected a response more or less frequently than attritees in the developmental sample, with frequencies being expressed in terms of percentages. Whether she received a 1, 2, 3, or 4 depended on whether this percentage differential was 10 to 19 (a 1 weight), 20 to 29 (a 2 weight), 30 to 39 (a 3 weight), or 40 or above (a 4 weight). As before, she received a zero for selecting a non-key response. For example (see Table C-1), an A answer would receive a -1 weight, a B answer, a +2 weight; and C and D answers, zeroes.

In percentage difference weighting, the actual percentage difference between survivors and attritees in the developmental sample was assigned to an individual in the test sample each time she selected a key response, and a zero otherwise. Here, an A answer would receive a -10 weight; a B answer, a +22 weight; and C and D answers, which were not key responses, zeroes.

In endorsement weighting, the percentage of survivors selecting a key response in the developmental sample was used as the weight. Here, an A answer in the test sample would receive a +28 weight; a B answer, a +39 weight; and C and D answers, a zero.

APPENDIX D

PERCENTAGE RESPONSE DISTRIBUTIONS FOR ITEMS
SIGNIFICANTLY RELATED TO ATTRITION

PERCENTAGE RESPONSE DISTRIBUTIONS FOR ITEMS
SIGNIFICANTLY RELATED TO ATTRITION*

<u>Numerical Codes</u>

Column variable: 1 = attritees, 3 = survivors

Row variable: 1-5 = response options

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*Percentages sometimes do not sum to 100 because of rounding error. <u>N</u>s do not include missing responses.

Item 34

	1	3
1	5.8	18.3
2	10.6	18.5
3	19.2	11.9
4	45.2	30.7
5	19.2	20.6
N =	104	378

Item 35

	1	3
1	61.0	44.4
2	24.0	37.5
3	1.0	.3
4	.0	.3
5	14.	17.5
N =	100	365

Item 41

	1	3
1	78.8	89.2
2	7.7	2.1
3	13.5	8.4
4	No Four	
5	.0	.3
N =	104	379

Item 46

	1	3
1	73.3	52.4
2	26.7	47.6
N =	105	380

Item 47

	1	3
1	44.8	32.1
2	55.2	67.9
N =	105	380

Item 52

	1	3
1	37.1	16.1
2	62.9	83.9
N =	105	380

Item 56

	1	3
1	11.4	5.5
2	88.6	94.5
N =	105	380

Item 60

	1	3
1	40.8	28.5
2	59.2	71.5
N =	103	379

Item 62

	1	3
1	34.6	14.7
2	65.4	85.3
N =	104	380

Item 63

	1	3
1	83.5	91.8
2	16.5	8.2
N =	103	379

Item 64

	1	3
1	42.3	27.6
2	57.7	72.4
N =	104	380

Item 66

	1	3
1	43.3	24.7
2	56.7	75.3
N =	104	380

Item 71

	1	3
1	8.7	7.1
2	15.4	29.2
3	52.9	50.0
4	17.3	11.8
5	5.8	1.8
N =	104	380

Item 73

	1	3
1	1.9	1.8
2	15.5	11.6
3	46.6	37.6
4	30.1	32.9
5	5.8	16.1
N =	103	380

Item 76

	1	3
1	2.9	.3
2	26.0	22.9
3	48.1	37.4
4	15.4	30.5
5	7.7	8.9
N =	104	380

Item 77

	1	3
1	.0	1.3
2	10.7	6.3
3	39.8	30.5
4	31.1	44.5
5	18.4	17.4
N =	103	380

Item 78

	1	3
1	1.0	.5
2	15.4	8.4
3	40.4	35.4
4	28.8	42.5
5	14.4	13.2
N =	104	379

Item 79

	1	3
1	6.8	1.3
2	13.6	15.0
3	49.5	44.7
4	26.2	28.4
5	3.9	10.5
N =	103	380

Item 89

	1	3
1	40.4	30.9
2	26.9	40.9
3	26.9	20.6
4	3.8	5.3
5	1.9	2.4
N =	104	379

Item 92

	1	3
1	7.7	7.6
2	21.2	23.4
3	42.3	33.4
4	16.3	27.6
5	12.5	7.9
N =	104	380

Item 94

	1	3
1	1.9	5.8
2	30.8	42.1

QUEST 1 Items (Continued)

Item 94 cont.

	1	3
3	49.0	32.6
4	11.5	15.3
5	6.7	4.2
N =	104	380

QUEST 2 Items

Item 34

	1	3
1	44.7	50.1
2	34.0	37.1
3	17.0	7.8
4	2.1	4.4
5	2.1	.5
N =	94	385

Item 47

	1	3
1	74.7	61.3
2	25.3	38.7
N =	99	393

Item 49

	1	3
1	29.3	17.3
2	70.7	82.7
N =	99	393

Item 52

	1	3
1	24.5	14.3
2	75.5	85.7
N =	98	392

Item 54

	1	3
1	31.6	19.1
2	68.4	80.9
N =	98	393

Item 60

	1	3
1	40.4	25.3
2	59.6	74.5
3	.0	.3
N =	99	392

Item 66

	1	3
1	59.6	44.4
2	40.4	55.6
N =	99	390

Item 93

	1	3
1	8.2	5.9
2	24.5	21.1
3	36.7	50.6
4	28.6	17.5
5	2.0	4.9
N =	98	389

Common Items

Item 14

	1	3
1	34.1	26.3
2	3.0	8.6
3	17.1	14.0
4	7.9	5.4
5	37.8	45.6
N =	164	627

Item 21

	1	3
1	22.8	12.9
2	17.5	14.2
3	39.2	48.3
4	15.3	20.2
5	5.3	4.4
N =	189	727

Item 17

	1	3
1	53.5	39.5
2	19.6	20.6
3	19.6	29.4
4	5.4	8.3
5	2.0	2.2
N =	204	768

Item 111

	1	3
1	37.1	42.7
2	44.2	43.8
3	9.6	8.6
4	5.1	3.7
5	4.1	1.2
N =	197	765

Item 19

	1	3
1	27.7	20.6
2	21.3	17.5
3	25.0	24.9
4	21.8	30.8
5	4.3	6.2
N =	188	724

Item 113

	1	3
1	51.5	54.2
2	34.7	35.8
3	8.7	7.6
4	1.5	1.4
5	3.6	.9
N =	196	762

Item 20

	1	3
1	25.6	40.5
2	42.4	36.2
3	13.8	9.7
4	8.4	7.1
5	9.9	6.4
N =	203	770

Item 115

	1	3
1	9.2	5.9
2	10.7	9.1
3	26.0	17.5
4	10.2	9.7
5	43.9	57.7
N =	196	759

Item 117

	1	3
1	9.6	7.3
2	16.8	12.9
3	28.9	19.7
4	11.2	10.2
5	33.5	49.9
N =	197	762

APPENDIX E

ITEMS WITH KEY RESPONSE OPTIONS
(TOTAL SAMPLE DATA)

ITEMS WITH KEY RESPONSE OPTIONS
(TOTAL SAMPLE DATA)

Table E-1

Items With Key Response Options: Percentage
Difference Between Attritees and Survivors

Item and Key Response Option	Percentage Selecting Option		Percentage Difference
	Attritees	Survivors	
Unique QUEST 1 Items			
34a	5.8	18.3	-12.5
34d	45.2	30.7	14.5
35a	61.0	44.4	16.6
35b	24.0	37.5	-13.5
41a	78.8	89.2	-10.4
46a	73.3	52.4	20.9
47a	44.8	32.1	12.7
52a	37.1	16.1	21.0
60a	40.8	28.5	12.3
62a	34.6	14.7	19.9
64a	42.3	27.6	14.7
66a	43.3	24.7	18.6
71b	15.4	29.2	-13.8
76c	48.1	37.4	10.7
76d	15.4	30.5	-15.1
77d	31.1	44.5	-13.4
78d	28.8	42.5	-13.7
82d	19.2	29.2	-10.0
89b	26.9	40.9	-14.0
91b	34.0	45.8	-11.8
92d	16.3	27.6	-11.3
94b	30.8	42.1	-11.3
94c	49.0	32.6	16.4

Table E-1 (Continued)

Item and Key Response Option	Percentage Selecting Option		Percentage Difference
	Attritees	Survivors	
Common Items			
17a	53.5	39.5	14.0
20a	25.6	40.5	-14.9
115e	43.9	57.7	13.8
117e	33.5	49.9	16.4

Note. Unique QUEST 1 item analysis was based on an N of 485, including 105 attritees and 380 survivors; and the common item analysis, on an N of 977, including 204 attritees and 773 survivors. Unique QUEST 2 items were not included in the analysis because of the low validation coefficients between the unique QUEST 2 response option scale and attrition (see Table 5). Some of the items in Table E-1 will not be found in Appendix C, since key responses are not restricted to significant items.

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